



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,118	07/24/2003	Kiyoshi Yoneda	YKI-0133	3918
23413	7590	10/31/2006	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			ROY, SIKHA	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/627,118

Applicant(s)

YONEDA ET AL.

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 22, 2006 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 – 9, 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,891,327 to Duineveld et al., and further in view of U.S. Patent 6,246,179 to Yamada.

Regarding claim 7 Duineveld discloses (Figs. 8, 9 column 14 lines 1-32, column 17 lines 27-54) a method of manufacturing an organic EL panel in which organic EL elements are arranged in a matrix, each organic EL element comprising at least an organic emissive layer (7, 9), disposed between a pixel electrode 5b and an opposing electrode 11, wherein each pixel electrode has a size corresponding to emissive region

Art Unit: 2879

of one pixel and wherein each opposing electrode is opposed to each pixel electrode and corresponds to plurality of pixels. Duineveld discloses the manufacturing method comprising forming the pixel electrodes 5b, forming insulating films 15 wherein each insulating film 15 has a form of frame covering the peripheral edges of the pixel electrodes, forming protrusions 13 wherein each protrusion has a thickness greater than that of the insulating around which the protrusion surrounds, forming a groove between the insulating film 15 and protrusion 13 and forming the organic emissive layer with mask supported by the protrusion.

Duineveld is silent about forming the hole transporting layer formed over the entire area of both the insulating films and the pixel electrodes.

Yamada in same field of endeavor discloses (Fig. 4B column 7 lines 27-48) organic EL element 60 is formed by forming pixel electrode (anode) 61 (peripheral edges covered by insulating films 19), the emissive element layer comprising hole transport layer 62, emissive layer 64 in form of discrete islands and opposing electrode (cathode) wherein the hole transport layer is formed over the entire area of the insulating films 19. It is noted that this configuration of hole transporting layer formed over the entire area of insulating films provides good contact with the pixel electrode underneath while forming light emitting layers of different colors in island form on top so that different pixels can emit different colors. Furthermore this provides simpler manufacturing of the organic EL element by forming hole transporting layer formed over the entire area by evaporation method and eliminating use of separate masks.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to form the hole transporting layer over the entire area of the insulating films and pixel electrodes of Duineveld as taught by Yamada for providing good contact of the hole transporting layer with the pixel electrode underneath while forming light emitting layers of different colors in island form on top so that different pixels can emit different colors and providing simpler method of manufacturing organic EL element with hole transporting layer formed over the entire area by evaporation method and eliminating use of separate masks.

Regarding claim 8 Duineveld discloses (column 6 lines 20-42) the insulating film(positively sloped rib) and the protrusion (negatively sloped relief pattern) are formed of the same material. Duineveld discloses the method of forming neighboring insulating layers or protrusions, and teaches the suitability of a two-step exposure wherein the neighboring structures are made of a same material and then patterned, to reduce the numbers of steps in the formation of the device (see at least Col. 1 7, lines 10- 14).

Regarding claim 9 Duineveld discloses the method of forming neighboring insulating layers or protrusions, and teaches the suitability of gray tone mask exposure wherein the neighboring structures are made of a same material and then patterned, to reduce the numbers of steps in the formation of the device (see at least Col. 1 7, lines 10- 14).

Regarding claims 13 and 14 Duineveld discloses (Fig. 8) the protrusions 13 comprising continuous line shape extending through the pixels.

Claims 10-12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,891,327 to Duineveld et al, U.S. Patent 6,246,179 to Yamada and further in view of U.S. Patent 5,937,272 to Tang.

Referring to claim 10 Duineveld and Yamada disclose all the limitations same as of claim 7 except for the limitations of forming the organic emissive layer by the protrusions supporting a donor sheet of organic emissive material, the organic emissive material being released by laser irradiation.

However in the same field of endeavor tang discloses a method of manufacturing an organic EL device, wherein a donor sheet of organic emissive material is supported by protrusions, said organic emissive material being released by laser irradiation (see at least Figs. 4-6). Tang teaches this process to provide a high definition organic EL layer with excellent utilization of the organic material and excellent uniformity of the deposited layers (see at least Col. 2, lines 25-32).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the emissive layer by the method disclosed by Tang, in order to produce a high definition organic EL device with excellent uniformity of the deposited layers, while having excellent utilization of the organic material, which reduces manufacturing costs.

Regarding claim 11 Duineveld discloses (column 6 lines 20-42) the insulating film(positively sloped rib) and the protrusion (negatively sloped relief pattern) are formed of the same material. Duineveld discloses the method of forming neighboring insulating layers or protrusions, and teaches the suitability of a two-step exposure wherein the neighboring structures are made of a same material and then patterned, to reduce the numbers of steps in the formation of the device (see at least Col. 1 7, lines 10- 14).

Regarding claim 12 Duineveld discloses the method of forming neighboring insulating layers or protrusions, and teaches the suitability of gray tone mask exposure wherein the neighboring structures are made of a same material and then patterned, to reduce the numbers of steps in the formation of the device (see at least Col. 1 7, lines 10- 14).

Regarding claims 15 and 16 Duineveld discloses (Fig. 8) the protrusions 13 comprising continuous line shape extending through the pixels.

### ***Response to Arguments***

Applicant's arguments with respect to claims 7 and 10 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Application Publication 2004/0135501 A1 to

Art Unit: 2879

Nishikawa discloses a mask supporting insulating film formed in the method of manufacturing organic EL panel.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Sikha Roy*

Sikha Roy  
Patent Examiner  
Art Unit 2879